THE NATURE CONSERVANCY NEWS

May/June 1984

NEW ENGLAND

Whose woods?

Tom Rawinski

If they're ours, they're yours—and his.

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MAY/JUNE 1984

THE NATURE CONSERVANCY NEWS

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COVER: One of New England's spectacular orchid species, the calypso (*Calypso bulbosa*). Its populations are declining in the three New England states in which it occurs: Maine, Vermont, and New Hampshire. Photo by Robert C. Simpson.

The Nature Conservancy is a national conservation organization committed to the preservation of natural diversity by protecting lands and waters supporting the best examples of all elements of our natural world.

To date the Conservancy and its members have been responsible for the preservation of 2,130,024 acres of forests, marshes, prairies, mountains, deserts, and islands: home to rare and endangered species of wildlife and plants. 3,409 projects have been completed since the acquisition of the first preserve in 1954. Approximately 60% of all preserves are retained by the Conservancy and managed by staff and volunteer land stewards.

A nonprofit membership organization, the Conservancy was incorporated in 1951 in the District of Columbia for scientific and educational purposes.

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The Nature Conservancy

A copy of the last financial report filed with the Department of State may be obtained by writing to: New York State, Department of State, Office of Charities Registration, Albany, New York 12231, *or* The Nature Conservancy, 1800 North Kent Street, Arlington, Virginia 22209.

Illustrations courtesy of American Land Forum

Recovering the First Frontier

by Lloyd C. Irland

THE GLACIER-CARVED LANDSCAPE we call New England has been worked diligently for some three and a half centuries. Over these years, New Englanders have developed a proud conservation tradition that exists alongside a generally utilitarian attitude toward land. One explanation for this seeming contradiction is that New England families tend to retain ownership of their farms, islands, and woodlots—sometimes for up to two or three centuries. In a nation where the average family moves once every seven years, this ownership pattern is emblematic of a durable human relationship with both land and community.

At the same time, New Englanders have watched their lands endure several successive "waves" of use. For example, from 1880 to 1980, eight million acres—one fifth of the region's total acreage—reverted from pastures and tillage to brush and forest. Cellarholes and stone walls in apparent wilderness areas silently attest to this extraordinary metamorphosis. Even in Thoreau's time, this change was under way in Massachusetts.

New England was the first region in the nation where wood production peaked. Most of its northern spruce was cut by 1900; mills then consumed the hardwoods and closed down. The pattern of timber use shifted as the forests steadily reclaimed the hills. Today, pulpwood and fuelwood account for more than half of the region's total timber harvest.

By the 1950's, a third type of land use—suburbanization—swept over New England, touching all areas but public forests and remote wildlands. Farms and woodlots sprouted surveyor's stakes, then bungalows. Within 60 miles of major cities, many of the woodlands and pastures not actually developed were subdivided for sale or keenly sought after by developers. By the 1960's, the

amount of developed land had surpassed that of agricultural land.

Then, in the 60's and 70's, residents of crowded suburbs sought escape once more. They were eager to buy the recreational lots being sold in the mountains and along coasts and lakeshores. Creating spectacular profits for a few, this wave of speculation crested in the early 1970's, leaving in its wake large areas of environmentally and esthetically sensitive land partially subdivided.

These various phases of manipulation and alteration have left few pristine ecosystems; such sites are believed to total less than one percent of New England's total acreage. Even Maine's Baxter State Park—at 200,000 acres the region's largest dedicated wilderness—has been logged over most of its expanse.

NEW ENGLAND'S long history of settlement and development presents a series of obstacles to conservation efforts. First, the region has a lower ratio of publicly owned land than any other forested region of the country. This means not only a greater task for private conservation groups, but also fewer opportunities to convey acquired properties to suitable public agencies for management.

In addition, the recent speculative land booms have contributed to the break-up of large farms and, therefore, to extreme fragmentation of land ownership. Many parcels must now be laboriously pieced together to create units large enough to protect any major natural feature. Examples are Vermont's Shelburne Pond and Black Pond in Massachusetts—Nature Conservancy preserves assembled parcel by parcel over many years.

Much of northern Maine is in common and undivided ownership. A given township may be held by hundreds of people, each owning an undivided fractional share. Reaching agreements among so many co-owners regarding the sale of such property is not a simple exercise.

Then, there is the massive problem of record-keeping. Since demand for land was slow for many years before the booming sales of the 1950's, '60's, and '70's, property transfers were often improperly recorded or not recorded at all. Trees, posts, and other features marking corners and boundaries have vanished. In many areas of the region, title-search costs, surprises, delays, and frustration are common in land transactions.

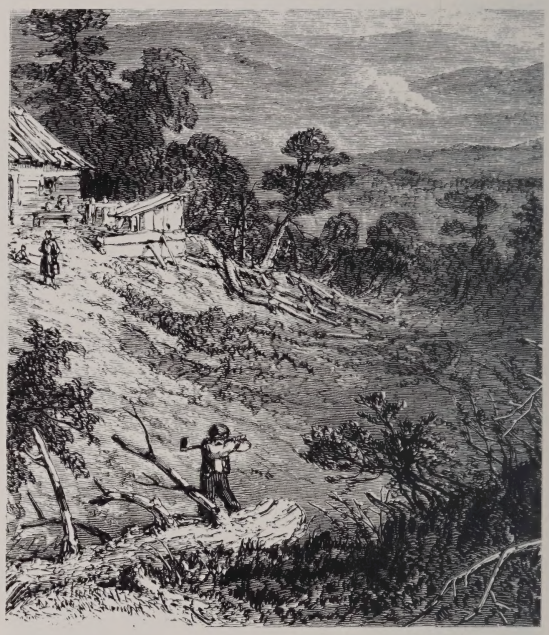
Near the shores, lakes, and cities, New Englanders have bid land prices up to spectacular levels. Here, conservationists need deep pockets, even when bargain sales are possible. Foregone tax revenues also are weighed heavily by local citizens and government when land passes into public or nonprofit ownership.

Finally, many rural New Englanders, who live close to the land, believe that land should be used. For example, owing largely to pressure from snowmobile groups, a current bill to add lands to New Hampshire's White Mountain National For-

est includes far less acreage than the original agency recommendation. Maine's Baxter Park Authority also recently admitted snowmobilers to the roads of its wilderness park.

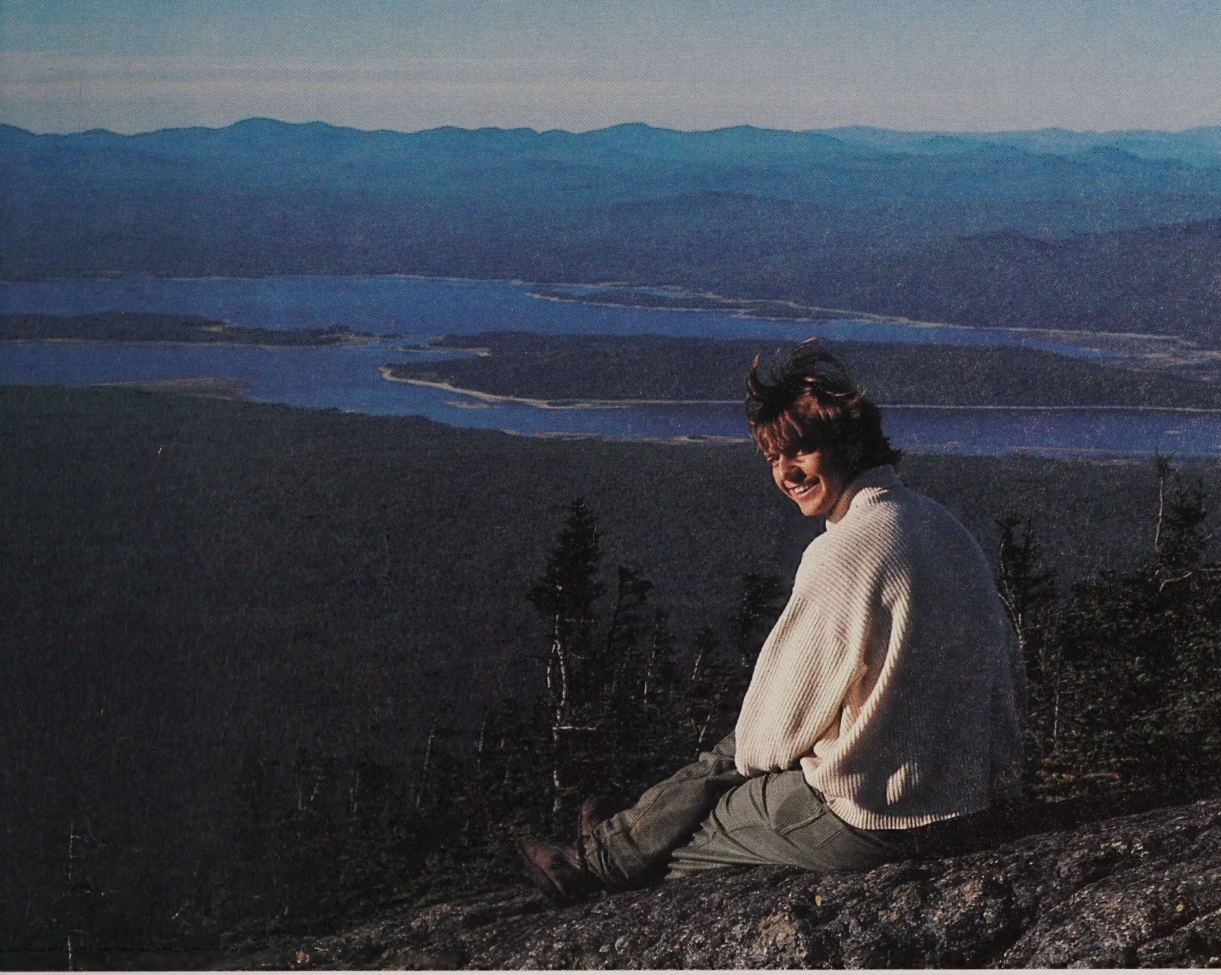
ALTHOUGH NEW ENGLAND presents these obstacles to land conservationists, it offers some major advantages as well. The region probably hosts the most fully developed network of town, regional, and state private conservation organizations in the nation. There are many municipal conservation commissions and dozens of town land trusts—both invented by the region's citizens—in addition to chapters and offices of national groups, such as the National Audubon Society, the Sierra Club, and The Nature Conservancy. New Englanders actively participate in land stewardship. Moreover, the concentration of established wealth and philanthropic traditions in the region offers greater opportunities for fund raising. A further bonus for conservationists: many families have owned and maintained ecologically valuable areas for years, often without realizing the significance of their properties. Colleges and universities, youth camps, and other non-profit organizations also hold a great deal of land, some of major natural importance. These property owners frequently include preserving critical sites among their multiple land-use objectives.

Amid the hills in the west and north of New England lie the large land holdings, ranging from 10,000-acre tracts of family-owned lumber companies to 2 million acres held by national paper companies. Forestland prices here are far lower than in the South and the Pacific Northwest. This combination of sizable holdings and lower costs has helped the Conservancy to complete several major acquisitions.



DESPITE SLOW population growth, development pressures in New England are strong. Suburbs keep sprawling. The forest is steadily changing as timber harvests rise and subdividers sell recreational and retirement lots. The next 30 years will see the virtually permanent conversion and subdivision of large areas of woodland and farms. Several million acres of land are potentially at risk. The following *News* pages describe in detail some of the natural communities and species at stake and The Nature Conservancy's methods for saving them.

Dr. Lloyd C. Irland has served with the U.S. Forest Service, the Yale School of Forestry, and the Maine Department of Conservation. Currently state economist in the Maine State Planning Office, he is also the author of *Wilderness, Economics and Policy;* and *Wildlands and Woodlots: the Story of New England's Forests.*



Caren Caljouw

Author/ecologist Tom Rawinski "in the field" in Maine

A Biologist's Tour of New England

by Tom Rawinski

IN 1981, The Nature Conservancy's first regional heritage program set out to classify, inventory, and determine the status of New England's natural communities, many of which are seriously threatened. Over 100 such systems—encompassing terrestrial, wetland, lake, stream, marine, estuarine, and subterranean environments—were named and described by the Eastern Regional Heritage Program's ecologist. This list was then reviewed by many biologists in the Northeast. For the first time, the ecological communities of a multi-state region were being catalogued and assessed.

Using a single classification system to serve the six New England states has many advantages. First, it establishes a common terminology that facilitates the exchange of information among ecologists. It also allows variability within a natural community to be expressed from one occurrence to the next and from one state to another. For example, calcareous sloping fens in Connecticut are quite similar to those found just to the north in Massachusetts, but there is at least one conspicuous difference: the striking great blue lobelia, a plant with a more southern distribution, is present

in nearly every Connecticut fen. Yet it approaches its northern range limit in Massachusetts and, therefore, rarely occurs in fens of that state.

With thousands of plant and animal species having varied distributions and habitat preferences, no two occurrences of a natural community are exactly alike. The goal, then, is to determine the status of these different communities throughout their ranges, which often extend beyond a state or even a region. Those found to be most rare or threatened are listed as priorities for protection by the Conservancy.

Relying upon published and unpublished literature, knowledgeable individuals, soil and geologic maps, aerial photographs, and herbarium records, heritage ecologists have documented an impressive array of high-quality natural communities in New England. Forest communities are perhaps the most familiar, and, surprisingly, a few pristine tracts of "old growth" continue to be discovered. A magnificent, virtually untouched forest in the Berkshires of Massachusetts, originally described in the 1926 book, *The Naturalist's Guide to the Americas,* was recently explored. It was found to be intact and even more extensive than formerly believed. (All told, 31 different forest communities are recognized in New England.)

Whitney Beals

The Conservancy is actively working to protect exemplary old-growth forest communities such as this pristine spruce-fir woodland in northern New Hampshire.

The stately northern hardwoods and undergrowth of hobblebush that thrive on the rocky Berkshire mountain slopes characterize a natural community distinctly different from the kind of forest found growing on the sandy soils of the lowlands. Pines tend to dominate on these well-drained deposits of glacial sands. Nowhere in New England is this forest community better represented than on an esker in Ossipee, New Hampshire, now being preserved through the efforts of the town and member organizations and individuals of the New Hampshire Natural Areas Program, especially The Society for the Protection of New Hampshire Forests—a Conservancy affiliate. At Ossipee, an old-growth forest supports red pine, white pine, and pitch pine. One exceptionally large red pine (131 feet tall) is the New England champion for this species. The tall pitch pines bear so little resemblance to the smaller and somewhat gnarled pitch pines of sandy roadsides and successional forests that their identification was confirmed only after an examination of fallen needles.

The factors that imperil New England's old-growth forests and other natural communities are as varied as the communities themselves. What follows is a description of some of the region's exemplary natural communities and the threats to each.

MAINE'S COASTAL raised bogs and inland raised bogs are impressive wetland systems, some thousands of acres in size. Both of these communities are characterized by peatland surfaces that rise above the local water table. Receiving little or no nutrients from streamflow or runoff, the plants here depend on the low concentrations of nutrients present in rainwater. These "rain-fed" communities of sedges, evergreen shrubs, and orchids are usually very low in stature, sometimes forming a vegetative cover no higher than a turfy lawn. The Conservancy's Great Wass Island Preserve embraces a fine example of a coastal raised bog, but several other such bogs are threatened by proposed mining of their peat resources.

In addition to protecting a large inland raised bog, Maine's Crystal Bog Preserve (a 1976 gift to the Conservancy from the J. M. Huber Corporation) features three different calcareous wetland natural communities—a northern New England calcareous seepage swamp, a calcareous sloping fen, and a calcareous basin fen. These wetlands are influenced by the emergence of groundwater rich in dissolved minerals such as calcium. As a

Sally C. Rooney

Robert C. Simpson

The Conservancy's Crystal Bog Preserve in Maine (top) features a large inland raised bog as well as three distinct calcareous wetland communities. It harbors the only New England population of the linear-leaved sundew (Drosera linearis), *above.*

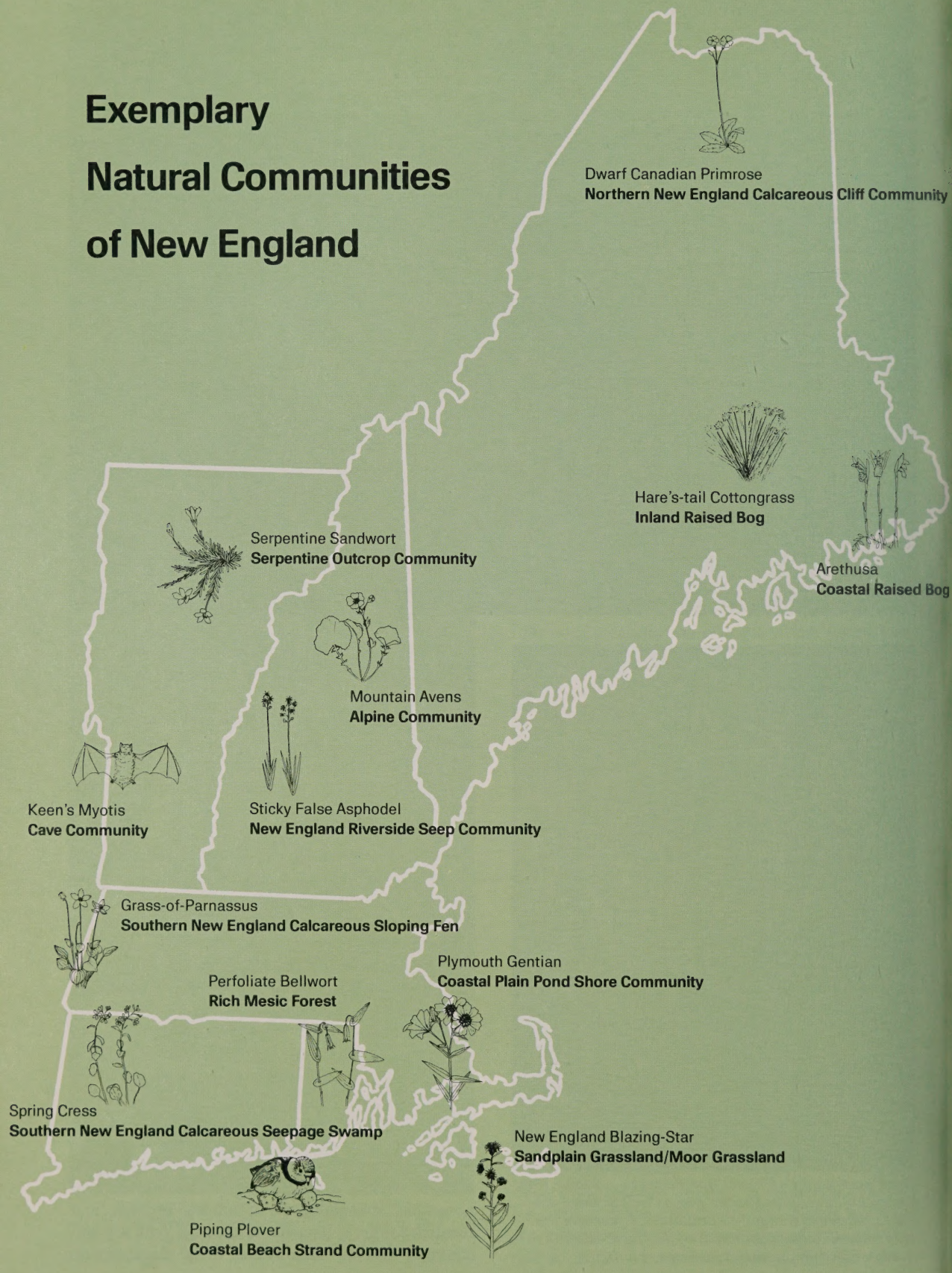
result, distinctive calcium-loving plants—orchid, sedge, and shrub species—thrive here.

FEW NATURAL AREAS in New England have attracted more visitors than New Hampshire's White Mountains. Here, an extensive alpine region supports an assemblage of arctic/alpine plants and animals well adapted to the rigors of a severe montane climate. At the same time, this plant community depends upon thin soils that are easily eroded by hikers. Increased public awareness of the fragile vegetation, however, has helped maintain the natural integrity of the community. Through the efforts of the U.S. Forest Service, U.S. Fish and Wildlife Service, and the Appalachian Mountain Club, hikers have been encouraged to stay on well-marked trails.

Riverside seeps and calcareous sloping fens are two natural communities of considerable rarity in the "Granite State." But heritage program biologists have discovered examples of both, occurring side by side along the Connecticut River.

The fen lies near the base of a hill where the upwelling of cold, mineral-rich groundwater creates an open, sloping peatland dominated by horsetails, sphagnum moss, sedges, orchids, and stunted conifers. Because calcareous fens are uncommon in New Hampshire, their characteristic

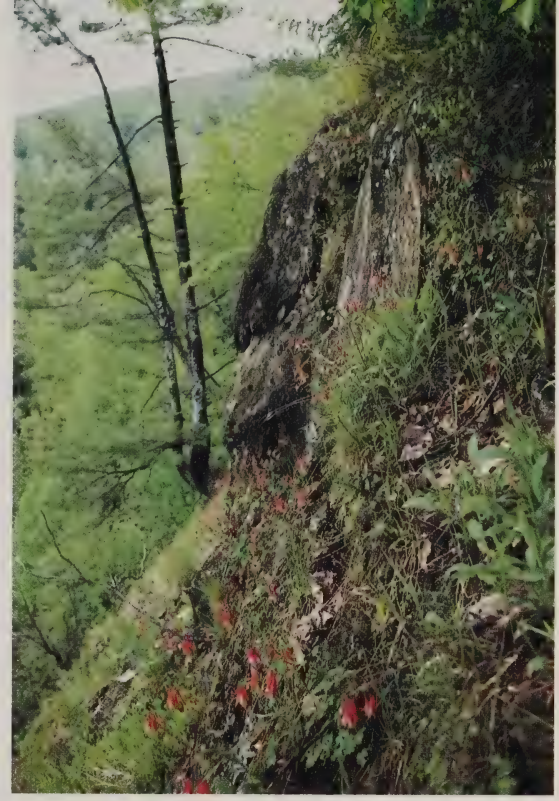
Exemplary Natural Communities of New England



plants—grass-of-parnassus, variegated scouring-rush, and showy lady's slipper—are rare as well.

Just downslope, along the flood-scoured zone of the Connecticut River, seepage water from the fen above emerges and flows over bare rock. The hardy plants growing on this shoreline represent the riverside seep community. Species here include spurred gentian, brook lobelia, balsam ragwort, and sticky false asphodel. The Conservancy is now trying to protect the fen and the seep, home for at least six rare plants. The greatest menace to these New England communities appears to be hydroelectric development; but new dams properly situated should not inundate the few remaining examples. (In extreme northern Maine, riverside seeps along the St. John River are significantly different from those found throughout the rest of New England, and are therefore recognized as distinct types.)

VERMONT CAVES are varied and fairly numerous. Although the diversity of cave-dwelling organisms in New England is not as great as in other regions of the country, the Conservancy's Dorset Bat Cave in Vermont protects one of New



Pam Weatherbee

Peter F. Zika

Top: Columbine brightens a serpentine outcrop on the Conservancy's Reed Brook Preserve in Massachusetts. Above: The only U.S. occurrence of serpentine sandwort (Minuartia marcescens) *is protected through a lease held by the Conservancy's Vermont Field Office.*

England's largest and most important caves for overwintering bat species, such as Keen's bat, eastern pipistrelle, and little brown bat. Intentional and unintentional disturbance of hibernating bats and other cave fauna is the most serious threat to this community.

Actually, two subterranean natural communities exist in New England—the caves that frequently serve as bat hibernacula, plus a subterranean stream/pool community about which little is currently known. An occurrence of the latter natural community in Vermont hosts a rare amphipod, *Stygobromus borealis*, an invertebrate known from only three locations in the world.

Irene H. Stuckey

Jeopardized primarily by asbestos and talc mining, Vermont's scattered and unusual serpentine outcrops (greenish rocks high in heavy metals) harbor a specialized natural community. Because serpentine soils are high in magnesium and contain little nutrients, they support few familiar plants. The hardy plants that do occur in these open, park-like areas—such as serpentine maidenhair fern and large-leaved sandwort—have adapted to the extremely poor, harsh soil conditions. One rare plant, the serpentine sandwort, makes its only U.S. appearance on a Vermont serpentine outcrop—a site protected by the Conservancy's Vermont Field Office through a 100-year lease. Reed Brook Preserve, recently acquired by the Conservancy, is an excellent example of this New England community type lying just over the Vermont line in Massachusetts.

THE HEATH HEN (*Tympanuchus cupido cupido*) no longer "booms" its mating call across the prairie-like sandy moors of Martha's Vineyard, its final stronghold. The extinct bird was last seen there in 1931. However, some of its habitat—the grasslands and heathlands of Martha's Vineyard and Nantucket—remains. It is New England's only prairie-like natural community. Called sandplain grasslands, heathlands, moors, or downs, these areas feature bushy rockrose, New England

Robert C. Simpson

Katama Plains, a sandplain grassland community on Martha's Vineyard, Massachusetts, shelters the nationally significant bushy rockrose (Helianthemum dumosum), *top, and the short-eared owl, above. The 128-acre site is currently under option by the Conservancy.*

Clay Taylor

Juvenile least tern. The Conservancy holds management agreements on several nesting sites for this rare bird, and has initiated a program in Rhode Island to minimize human disturbance during nesting season.

blazing-star, and Nantucket shadbush. Short-eared owls and northern harriers, declining in much of the Northeast, still nest in the sandplains and glide over the grasslands in search of prey.

Well exemplified only in Massachusetts, sandplain grasslands are flat and easily developed. Many acres of this rare natural community have been altered or destroyed, although on Nantucket some fine tracts of heathland are held as conservation lands. But other key parcels, especially on Martha's Vineyard, have been developed. The Conservancy's New England Field Office, working with the Town of Edgartown and the Commonwealth of Massachusetts, has recently acquired an option to purchase a 128-acre remnant of the "Vineyard Great Plains" that once stretched across much of the island's southern shore.

Southeastern Massachusetts also bears scores of glacial kettlehole ponds that support a distinctive shoreline flora, the coastal plain pond-shore community. Because these ponds undergo pronounced seasonal water-level fluctuations, a large shoreline habitat—ideal for plant colonization—appears during late summer. The number of plants restricted in New England to this natural community is impressive: Plymouth gentian (*Sabatia kennedyana*), slender arrowhead (*Sagittaria teres*), pink tickseed or rose coreopsis (*Coreopsis rosea*), short-beaked bald-rush (*Psilocarya nitens*), New England white-bracted boneset (*Eupatorium leucolepis* var. *novae-angliae*), and black-fruited spikerush (*Eleocharis melanocarpa*). In all, more than 30 plant species listed as rare in the state and some species considered globally rare flourish on these pond shores.

Unfortunately, residential and industrial development is accelerating in the immediate vicinity of the ponds; and the ponds and their shorelines are threatened by beach development, pollution, off-road vehicles, and, possibly, excessive groundwater extraction. Over the past year, the Conservancy's Massachusetts Natural Areas Registry Program has secured the cooperation of landowners in protecting ten coastal plain ponds. A similar program is now being launched to safeguard the best examples of glacial kettlehole ponds in Rhode Island.

ON SWELTERING SUMMER WEEKENDS, Rhode Island's coastal beaches and sea breezes entice thousands of citizens away from the mainland. These appealing shorelines also support plants and animals typical of the southern New England coastal beach strand community. Seabeach

Susan Bournique

Above: wild rice in the tidal marshes surrounding Chapman's Pond, Connecticut. Right and facing page: The area's 250 wildlife species include bobcats and bald eagles.

Robert C. Simpson

sandwort (rare in the state), sea rocket, and beach pea grow above the high-tide line on secluded stretches of sand.

The beaches and adjacent sand dunes also provide significant nesting habitat for the rare piping plover and colonies of rare least terns. Excessive human disturbance during the nesting season in late spring is the most significant threat to these birds and to the integrity of the entire natural community. At key sites identified by the Rhode Island Heritage Program, the Conservancy is working with private landowners to steer visitors away from critical sites during the piping plover's nesting period.

Robert C. Simpson

The unusual vegetation of two other Rhode Island natural communities was documented by naturalists as early as the late 1800's. In the vicinity of the Village of Limerock, calcium-loving plants thrive on ledges of white marble (recrystallized limestone) and on the fertile downslope soils derived from the area's calcium-rich bedrock. The ledge-clinging ferns, such as walking fern and purple-stemmed cliffbrake, represent the southern New England calcareous cliff community, while the adjacent rich mesic forest hosts red baneberry, horse-balm, slippery elm, and perfoliate bellwort.

THE CONNECTICUT RIVER'S estuary is one of the most productive ecosystems in New England. Near the river's upstream limit of tidal influence, extensive marshes of wild rice, sweet-flag, broad-leaved arrowhead, and narrow-leaved cattail provide habitat for a wide array of animals. Bird life is particularly abundant in this freshwater tidal marsh, part of which lies within the boundaries of the Conservancy's Cynthia B. Carlson Nature Preserve at Chapman's Pond.

In addition to the tall, dominant marsh plants, this wetland supports small, specialized rosette plants that are inundated (flowers and all), then exposed with each tide. These remarkable plants, adapted so well to the soft, muddy tidal flats, include mudwort (*Limosella australis*), Smith's bulrush (*Scirpus smithii*), and spatulate-leaved arrowhead (*Sagittaria calycina* ssp. *spongiosus*).

Connecticut's marble valley region, in the northwestern part of the state, has been called a botanical paradise because of its many calcium-loving plants. Here, the cool, calcareous seepage swamps support some of the same northern plant species found in Maine, such as sweet coltsfoot, hemlock parsley, and dwarf miterwort. But unlike the northern swamps, the Connecticut swamps harbor a full complement of southern plants as well: spring cress, skunk cabbage, spicebush, and the rare globe flower.

Calcareous wetlands in Connecticut are threatened by logging, draining for agricultural purposes, and excessive nutrient enrichment. Through its critical areas campaign, the Connecticut Chapter is endeavoring to preserve the best of them and, to date, has safeguarded several outstanding examples in the towns of Salisbury, Sharon, and Canaan.

THE NATURE CONSERVANCY has been instrumental in securing protection for an impressive variety of New England's natural communities. Although many more are in jeopardy, our efforts to save them have been greatly aided by the work of the Conservancy's Eastern Regional Heritage Program. For the first time, natural communities are being inventoried regionally (instead of site by site or state by state) and described by means of a single classification system. It is the surest means for protecting many more of New England's finest forests, wetlands, limestone caves, glacial kettlehole ponds, mountain summits, and prairie-like sandplains—natural communities we cannot afford to lose.

Tom Rawinski is the community ecologist with the Conservancy's Eastern Regional Heritage Program.

1984 Annual Meeting and Conference
The Nature Conservancy
Norfolk, Virginia
September 21-23

Official Notice

Notice is hereby given to the members of The Nature Conservancy that, pursuant to Article VII, Section 2, of the Bylaws of The Nature Conservancy, 1980 revision, a membership meeting will be held at the Omni Hotel, Norfolk, Virginia, at 10:15 a.m. on September 22, 1984, for the purpose of receiving reports, electing officers and governors of The Nature Conservancy for the ensuing year, and acting on such other business that may come before the meeting.

Please note the official ballot on the next page. It should be signed and returned as described therein.

William D. Blair, Jr., President

Official Ballot

☐ I cast my vote for the slate of officers and governors approved by the nominating committee.

Name (please print) _____

Address _____

_____

Signature _____

A valid ballot can be executed only by a member in good standing. Return signed ballot to: Assistant Secretary, The Nature Conservancy, 1800 N. Kent Street, Arlington, Virginia 22209. To allow sufficient time for processing, ballots should be received by September 1, 1984.

☐ Please send me a complete registration and information packet for The Nature Conservancy's 1984 Annual Meeting and Conference.

Registration deadline is Friday, August 24.

clip and send

- - - -

NOMINATED AS MEMBERS:

***Robert B. Anderson,** New Mexico. Partner, Lincoln County Land and Cattle Company; Trustee, New Mexico Chapter, The Nature Conservancy.

***William S. Brewster,** Massachusetts. Former multinational corporation chief executive, USM Corp.; director, The Liberty Mutual Insurance Companies, International Paper Corp., Schlegel Corp., and Standex Corp., member, The Business Council; governor, Plimoth Plantation, Director, International Atlantic Salmon Foundation and chairman, Manomet Bird Observatory; previously chairman, New England Aquarium.

***David L. Harrison,** Colorado, current secretary. Partner, law firm of Moses, Wittemyer, Harrison and Woodruff, Boulder; trustee and former chairman, Colorado Chapter, The Nature Conservancy; co-author of articles on water use and land planning; member, Colorado and American Bar Associations; Oak Leaf Award, The Nature Conservancy, 1978.

***George C. (Tim) Hixon,** Texas. Former chairman of the executive committee and president, San Antonio Zoological Society; director and past president, Port Aransas Rod and Reel Club; past director and executive vice president, Game Conservation International; past director, National Foundation for Conservation and Environmental Officers; chairman, Conservation Committee, Boone and Crockett Club; director, Gulf Coast Conservation Society. Involved in the management of Hixon Properties Incorporated. Nominated for election for remainder of unexpired term of B. K. Johnson.

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George Putnam, Massachusetts. Chairman, The Putnam Management Company, Inc. and The Putnam Group of Mutual Funds; until recently, treasurer, Harvard University and member, Harvard Board of Overseers; director: General Mills, Inc.; Freeport-McMoRan, Inc.; General Mills, Inc.; Rockefeller Center, Inc.; S.C.A. Services, Inc.; American Mutual Insurance Companies; Boston Safe Deposit and Trust Company; The Boston Company; American Public Broadcasting; Harvard Community Health Plan. Trustee: Massachusetts General Hospital; Rockefeller Brothers Fund; Jackson Laboratory, Bar Harbor, Maine. President, McLean Hospital.

***G. Jon Roush,** Montana. Cattle rancher; director, The Northern Lights Institute; executive vice president, The Nature Conservancy 1973-1976.

***William I. Spencer,** New York. Retired president, chief administrative officer and director of Citicorp and its principal subsidiary, Citibank, N.A. Director: Amerada Hess Corp.; United Technologies Corp.; Trust Company of the West; U S West, Inc.; Bio-Response, Inc.; Capital Cities Communications, Inc.; Keller Industries, Inc.; McLean Industries, Inc.; Universal Trading Exchange, Inc.; trustee, Corporate Property Investors; member, Corporate Relations Committee, The Nature Conservancy.

(over)

Jack Hood Vaughn, Virginia. Vice President for Private Sector Projects, Development Associates; former ambassador to Columbia and Panama; former director, Peace Corps; former coordinator, the Alliance for Progress; former Assistant Secretary of State for Interamerican Affairs; former president, National Urban Coalition; former chairman, Interamerican Development Institute; member, International Advisory Committee, The Nature Conservancy.

***Richard S. Weinstein,** Florida. Attorney; chairman, Florida Nature Conservancy; vice chairman, John D. MacArthur Park Conservation Board; past president, Science Museum, Palm Beach County; former member and Secretary, Board of Governors, The Nature Conservancy. Nominated for election for remainder of unexpired term of Donal C. O'Brien, Jr.

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*Current Member renominated

Tentative Schedule

Friday, September 21

Morning
- Planned Giving Seminar
- Open Board of Governors Committee Meetings
- The Nature Conservancy 101

Noon
- Idea Exchange Luncheon

Afternoon
- Open Board of Governors Committee Meetings
- The Nature Conservancy 101
- Virginia Chapter Annual Meeting

Evening
- Tidewater Jamboree

Saturday, September 22

Morning
- Film Screenings
- Lecture on The Great Dismal Swamp
- Annual Meeting and President's Report

Afternoon
- Field Trips to:
  - Great Dismal Swamp
  - Chesapeake Bay
  - Back Bay National Wildlife Refuge
  - Chrysler Museum and Hermitage Foundation Museum
  - Seashore State Park, Virginia
  - Fisherman's Island National Wildlife Refuge

Evening
- Annual Awards Banquet

Sunday, September 23

All Day
- Field Trips to:
  - Virginia Coast Reserve
  - Nags Head Woods and Outer Banks, North Carolina
  - Chesapeake Bay
  - Merchants Mill Pond State Park
  - False Cape State Park, North Carolina

Illustration by Henry Cole

Journeys into Connecticut

by W. Kent Olson

"To them there is no time."
—Ralph Waldo Emerson

The long-legged birds of Chimon Island skitter when you near them. They jump, threatening to fly, but after sensing that you intend no harm, they generally settle again on the tangle of branches. One bird preens another; a male feeds a female; young birds scream for food. You plod through a jungle of cat briar and poison ivy to get to this rookery, walking gingerly to avoid the guano below and the hail of discharge from the nests above. Occasionally a heron or egret will spook and fly, beak out, neck contracted, legs trailing. They float on the air, high above the Long Island Sound. The herons of Chimon can hardly know that they fly against time. . . .

* * *

LONG AGO, before the glaciers, before man, what is now New England lay under an extensive tropical swamp. Dinosaurs tramped around among the fronds, leaving the indelible marks of their passage in the muds and other warm sediments of ancestral Connecticut. I know this not from any special knowledge of these creatures but from visible evidence: Wesleyan University's Science Tower, which served until recently as The Nature Conservancy's Connecticut headquarters, houses slab after red slab of Triassic sandstone bearing the fossil footprints of the huge reptiles. I walked by them daily on my way to and from work.

There are many plausible—as well as implausible—theories on dinosaur extinction. Nonetheless, the fossil record suggests that throughout ancient prehistory (including the era of the giant reptiles), and into the recent past, the rate of natural extinctions nearly equaled the rate at which new species evolved. Living things came and went in relative equilibrium. But in the last two centuries or so, extinctions have increased exponentially, primarily from human destruction of habitats, which is outpacing the evolution of new species.

Scientists estimate that from five to ten million species of flora and fauna may now exist worldwide. Some estimates go as high as 30 million. Of this number, only a few hundred thousand have been positively identified and named, and only a small fraction of these have been investigated for their potential usefulness to man. The precise numbers are immaterial. The critical fact is that we are extinguishing creatures and whole ecosystems at an alarming rate. We are causing, in the words of Dr. Paul Ehrlich, "a gross simplification of Earth's biology." Dr. Norman Myers, author of *The Sinking Ark,* tells us that right now one species a day is vanishing and that by the end of the century unnatural extinctions will reach one per hour.

It is reasonable, then, to speculate that perhaps we have already eradicated a species that may have held a cure for cancer. Similarly, we may have unknowingly extirpated a plant whose germ plasms might have invigorated an ailing strain of a domestic food crop. And could we have already discarded a natural repellent to the gypsy moth or the spruce budworm?

THE MOST SPECIES-RICH parts of the globe are the tropical belts. As you move north and south from the Equator, there is a natural decline in the abundance and distribution of living things. The poles, of course, are biological deserts. Midway between the tropics and the ice caps lies Connecticut. Many of the state's flora and fauna are rare because they are southern outliers of northerly species or examples of southerly species that have reached their northernmost limits at our latitude.

Add to this the effects of continental glaciation, which scraped New England bare of soils. The ice wall displaced terrestrial animals, scoured holes in the landscape, plucked apart cliffs, gentled the hills, and plowed oceanward tons of boulders and other detritus (and deposited all this rubble as a stringy, sandy periglacial afterthought we now call Long Island).

Consider also that America's white settlers started *their* continental march here, denuding most of the East Coast. Unlike the glacier, however, the settlers did not retreat. Vast government holdings were sold to timber companies or converted to farmland. By 1860, 40 percent of New England was being farmed. But by 1900, the figure was only 20 percent, and by 1950, it was 7 percent. Many New England farmers had given up, and the loggers of that day had cut and run. And nature, left to its own devices, was reclaiming the land.

In a sense, then, the resilient New England wilderness was restoring itself to a new but less diverse natural order. The new, humanized landscape only approximated the old, untrammeled one. Gone forever were the caribou, great auk, passenger pigeon, and—it can reasonably be surmised—countless species of plants and animals that were extirpated even before they could be discovered and named.

TODAY'S CONNECTICUT is one of the best kept secrets on the East Coast. This is both a plus and a problem. It's a plus because despite the state's location in the Boston-New York megalopolis and its early settlement, Connecticut's three-million-acre countryside is still rural and largely undeveloped. The problem? Any unknown area—that is, land without a constituency—can succumb quickly to the bulldozer blade, and no one will be there to prevent it.

The destruction of habitat continues in Connecticut, and we only now are gaining some sense of how severe the damage is. We know, for example, roughly how many ospreys and bald eagles survive. They are shunted from place to place by incursions of second homes, parking lots, and shopping malls. They need whatever suitable space we can save.

We also know that certain pristine wetlands are fast disappearing, and with them a turtle that lives nowhere else in the state. The animal is doubly jeopardized because it brings hundreds of dollars in the black market pet trade.

And what about the small whorled pogonia? When a state biologist finally located what is believed to be Connecticut's sole population, he found just four surviving stems of the plant—and a trowel hole.

The exceedingly rare piping plover, a small bird that nests on the sand, occurs in a handful of Connecticut locations. The best site is a barrier beach slated for estates or a marina, even though the area is vulnerable to storms and severe erosion and was completely submerged in the notorious 1938 hurricane. Since 97 percent of Connecticut's coastline has been developed, the amount of piping plover habitat that remains is insufficient.

Connecticut was part of the first frontier. It was

Mildred E. Faust

The federally endangered small whorled pogonia (Isotria medeoloides), *rarest orchid in the northeastern U.S. Only about 1,500 individual plants remain, including those discovered last summer by Conservancy botanists.*

Clay Taylor

Juvenile piping plover. Once relatively plentiful, this species is now reduced to fewer than 20 breeding pairs in Connecticut and approximately 1,500 pairs worldwide.

stripped bald, then abandoned. Now it is a land restored but reoccupied. The message is simple: we can ravage the state again—this time with absolutely no hope of a second recovery—or we can protect its most critically threatened and needed ecosystems and species.

ON JANUARY 6, 1984, Governor William O'Neill announced the establishment of the Connecticut Natural Diversity Data Base, a joint program of the Department of Environmental Protection (DEP) and the Conservancy, with partial support from the National Audubon Society. This computerized inventory of biological rarities represents nine years of research by DEP scientists. Their record so far shows 1,400 historic and present occurrences of rare natural elements. About half are living examples of the state's 81 uncommon vertebrates and 275 vascular plant taxa.

With this ecological information in hand, the Conservancy's 7,000-member Connecticut Chapter chose to act. The chapter, recipient of the Conservancy's 1983 Award for Outstanding Progress, has launched the three-year Connecticut Critical Areas Program, the most important land-saving effort ever undertaken in Connecticut by any organization, public or private. Through the program, directed by Dave Warren, 25 biologically vital sites have been targeted for protection. The entire program will cost $3.1 million and incorporates a $1.8 million agenda to safeguard these properties by purchase, gift, voluntary registration, and other private means.

Unlike traditional protection projects initiated by the Conservancy, the Connecticut campaign also includes a permanent revolving fund of $700,000 to acquire sites not yet on the market but likely to be threatened with development in the future. The chapter borrows from the fund to

make an acquisition and repays through fund raising. Thus, the principal "rolls over" and remains available forever, multiplying the effectiveness of every dollar contributed.

The program's permanent stewardship fund ($380,000) is earmarked to manage properties in perpetuity. The chapter owns more than 60 preserves and 45 conservation easements and also retains legal reversionary interests in 50 sites already transferred to other organizations. Income from the fund is used for building trails to ensure safe access, managing ecological and hydrological systems, guarding against timber theft and other violations of property law, developing master plans for preserve stewardship, and hiring wardens and interns.

Finally, the campaign's $160,000 science fund was established to conduct ecological inventories, to continue field investigations, to research and map occurrences of rare and endangered species and unusual habitats, to enter and retrieve computerized data, and to revise periodically the critical areas priority list. The latter becomes necessary when targeted lands succumb to development, are protected by the Conservancy, or are replaced on the list in response to new scientific data.

Governor O'Neill is honorary chairman of the Connecticut Critical Areas Program. The corporate chairman is S. Bruce Smart, Jr., chairman and chief executive officer of Continental Group, Inc. Connecticut Chapter Chairman Alexander S. Gardner is also a member. The other committee volunteers are attorneys, scientists, college presidents and deans, and representatives of the U.S. Congress.

This array of professions reflects not only the nonpartisan nature of the program but also its statewide significance, its bearing on the quality of life in Connecticut, and its relevance to the business community. Continental's Smart has said, "No business can be successful in a world whose ecosystems have broken down. . . . The Nature Conservancy has been uniquely successful in protecting habitats by enlisting corporate aid rather than denouncing corporate motives."

Through its Connecticut Critical Areas Program, formally initiated in 1983, the chapter has raised approximately one-third of the funds needed to attain its campaign goal. It has also protected

R. G. Bachand

Newly hatched snowy egrets in a Chimon Island nest.

R.G. Bachand

Black-crowned night heron, one of many wading bird species that nest on Chimon Island.

five tracts of vital land and has secured options to purchase two additional properties. One of these is Chimon Island.

THE CONNECTICUT CHAPTER obtained its option on Chimon Island after a decade of negotiations. Lying a mile from the Connecticut shore, the 70-acre island supports the state's most significant heronry as well as the largest such rookery in Long Island Sound. According to the U.S. Fish and Wildlife Service, Chimon also is one of the three largest wading bird colonies on the northern seaboard. Nesting species include great egret, snowy egret, cattle egret, black-crowned night heron, yellow-crowned night heron, little blue heron, green heron, and glossy ibis. (The importance of this site was further demonstrated when the entire congressional delegation of Connecticut recently proposed the creation of a national wildlife refuge that, if established, will embrace several of their state's coastal islands, including Chimon.)

Ornithologist Noble Proctor, author of *25 Birding Areas in Connecticut*, notes that Chimon Island is the breeding ground for several species that nest nowhere else in the state. To learn more, the Connecticut Audubon Society—with partial support from the Conservancy—has been conducting ornithological research there for the last three years. Audubon researchers have discovered that the 2,000 nesting herons of Chimon feed as far south as Long Island, and north and east to the Housatonic River, and beyond.

Although the island has been for sale for many years, the asking price was always far beyond the Conservancy's means, and no other serious offers were made by anyone else until recently. Chimon was listed at $2.5 million, reflecting the scarcity of undeveloped island real estate within an hour of New York City. The owner has received at least one bona fide offer from a developer, whose plans call for a 22-unit subdivision of luxury homes, each with beachfront. If the plans are executed, the most important wading bird rookery in Long Island Sound will be degraded. Scientists do not know if the herons would recolonize since, it is believed, no suitable habitat remains elsewhere.

To counter the developer's offer, the Conservancy proposed a bargain purchase, by which the owner would sell us part of the property and donate the remaining land, thus earning a charitable deduction at tax time. After protracted and complicated negotiations, we emerged with an option to purchase Chimon for $1.1 million—well below the asking price, well under the City of Norwalk's latest assessment, and comparable with our prior offers (adjusted for inflation). The Conservancy then sought a contribution from the city, whose Common Council voted, on September 27, 1983, to pledge $100,000 in return for the opportunity to help the Conservancy plan for the island's future.

The Conservancy's option expires on September 15, 1984. If we fail to exercise our right to buy Chimon Island, the city's $100,000 pledge will be nullified, and the owner will be free to sell to whomever he wishes. Should development occur, several bird species may be led another step toward extinction. And Connecticut, indeed the entire region, will have lost irretrievably an uncommon component of its natural heritage. To save the rookery, we must raise the remaining funds.

* * *

The herons, ibises, and egrets of Chimon are ignorant of the threat facing them. But *we* are aware of their plight. We know, too, that only our intervention will sustain the birds' natural claim for a permanent place on the earth.

Ken Olson is executive director of the Conservancy's Connecticut Chapter and a visiting lecturer at Wesleyan University.

Bob Highlander

Islands of Life: An Update

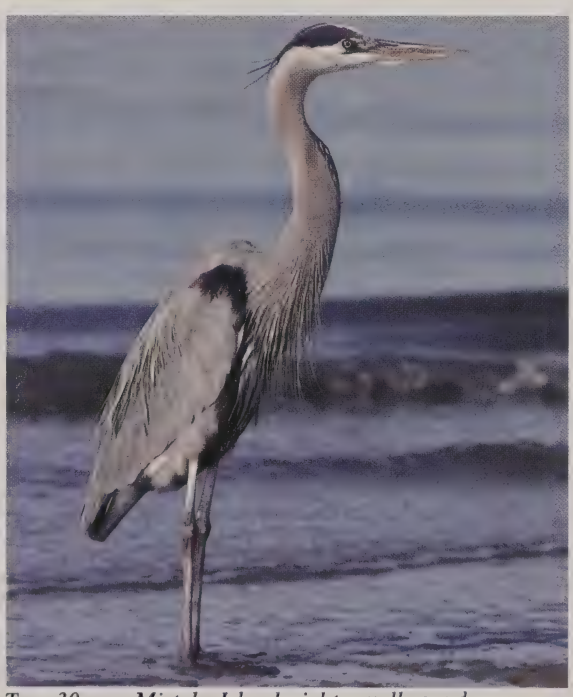
John Albright

Robert C. Simpson

In August of 1983, the Conservancy's Maine Chapter launched an ambitious $610,000 effort to protect eight spectacular sites in eastern and northern Maine. Carefully chosen for their ecological significance, most of these "Islands of Life" *are* islands, stretching from Blue Hill Bay to Machias Bay along the state's renowned rocky coastline. Two, however, are ecological "islands"—distinctive inland communities that support some of Maine's rarest plants. One of these, an unusual bog, harbors seven critically rare plant species.

The coastal isles that the chapter seeks to safeguard through its "Islands of Life" campaign embrace striking scenery, as well as some of Maine's most productive wildlife habitat: vital nesting sites for American bald eagles, great blue herons, and literally thousands of seabirds. Several tracts of land on these islands had been placed on the market for summer home development, but with the campaign's impending success, these ecologically vital sites will be saved.

The effort was inspired and encouraged by the generous support of a few dedicated friends who pledged to match, dollar-for-dollar, all gifts to the campaign. Now, over 1,100 contributions later, the chapter lacks only $60,000 to meet its enterprising fund-raising goal. Although this amount is still required to permanently safeguard Ship Island, Mistake Island, Northwest Head, Larrabbee Heath, Woodland Bog, and the other sites, the future of Maine's "Islands of Life" look vastly brighter.



Gary Meszaros

Top: 30-acre Mistake Island; right: small round-leaved orchis (Orchis rotundifolia) *and showy lady's-slipper* (Cypripedium reginae), *Woodland Bog; above: great blue heron, Upper Birch Island.*

ECOLOGY FORUM

No. 53
by Lawrence L. Master
Director/Zoologist
Eastern Regional Heritage Program

A REGIONAL HERITAGE PROGRAM?

The year 1984 marks the tenth anniversary of the first "state natural heritage inventory." Established by The Nature Conservancy, typically in partnership with state governments, these state programs now number 33. (The Tennessee Valley Authority region is overseen by a separate program.)

The utility and cost-effectiveness of the natural heritage programs in ascertaining the status of a state's biota have exceeded all expectations. They have identified numerous sites appropriate for preservation and guided development away from hundreds of critical areas early in the decision-making process.

Although they have evolved and changed somewhat over the past decade, the programs' basic structures and strengths remain the same. Quite simply, they provide a framework and methodology for the systematic, continuous collection and management of information on rare species and exemplary natural communities in a particular state. By focusing this inventory effort on rare and endangered species and on the best examples of all of a state's natural community or ecosystem types, heritage programs efficiently gather information that permits us to effectively protect the full range of a state's biological diversity.

To guide protection efforts, staff members of a heritage program are asked to prepare a "natural diversity scorecard"—an annually updated list of priorities of the last or best occurrences of rare species and superior natural communities in their state. This list of the state's most jeopardized natural elements provides the Conservancy with a protection agenda.

Establishing priorities, both for heritage inventory work and for protection efforts, is the key to the Conservancy's ultimate success. Lest we forever lose irreplaceable portions of our natural heritage, we must apply a disproportionate amount of time, effort, and money to those species and community types whose continued existence is most threatened.

On a state-by-state basis, heritage programs have succeeded admirably in developing state-level priorities for inventory and protection endeavors. The criteria used to establish these priorities include a natural feature's rarity in the state, its state range, its ecological fragility, the possibility of its destruction, and the number of adequately protected occurrences.

Unfortunately, these state priorities do not readily convert to global (worldwide) priorities because a species or community type that is very rare in one state may be common in another. Or, a species uncommon in the U.S. may be abundant in Canada. In fact, most widespread species are rare in at least one state somewhere in their range. Only a relatively small number of species or community types are rare or threatened throughout their entire range—that is, possibly in danger of extinction.

Clearly, we would like to allocate greater inventory and protection efforts to the latter, globally significant species or communities than to those that are rare in one state but plentiful elsewhere. For this reason, our protection priorities are based on both global and state rarity of species and natural communities.

For a species or community restricted to a single state (an endemic), the state and global priorities are obviously the same. However, determining the global status of "multi-state" species and communities requires information about the condition of the species/communities beyond the borders of one's state, an ability to obtain access to this information in an efficient manner, and use of the same technical language by people exchanging this information.

For species, the language problem has been solved by using standardized species lists accepted

by the Conservancy's national office, with allowances for the rare instances in which the same species is known by different scientific names in different states. For natural communities, the problem currently is much thornier, since there is no universal system of scientific names for community types. Until recently, each state heritage program developed its own framework for classifying communities or used a variation of some procedure already being used in the state. The resulting state-to-state incompatibilities in classification systems have made it difficult to determine conservation priorities for communities on a regional or global scale. Thus, few meaningful range-wide assessments of community endangerment and community management needs have been completed.

To help solve these problems, the Conservancy's first regional heritage program was established in 1982 through a generous grant from the J. N. Pew, Jr. Charitable Trust. The Eastern Regional Heritage Program employs the same staff structure found in state heritage programs: a director/zoologist, an ecologist/botanist, an information manager, and a few interns. But the tasks confronting the regional heritage program staff differ considerably from those facing state heritage people. Indeed, the regional effort is intended to complement and support, not duplicate, the work under way in the individual states.

To help standardize the classification of natural community types, the regional heritage ecologist has developed the Conservancy's first regional classification of ecosystems or natural communities. Now being used by the Conservancy in all six New England states, the classification system is serving as a model for the other northeastern states as well. For the first time, an objective determination of regional and, ultimately, global conservation priorities for the rarest and most threatened of these ecosystems is within our grasp.

The information manager of the Eastern Regional Heritage Program is responsible for compiling, computer indexing, updating, and disseminating information on the status of species and natural communities in all states in the Conservancy's 13-state Eastern Region (Maine to Virginia). With state heritage programs now under way or being developed in each of those states, the information is or will soon be available from these programs to answer basic, critical questions. For example, how many occurrences of the small whorled pogonia (an endangered orchid species) exist throughout the plant's *entire* range? Which of these sites are adequately protected, and what level of protection is needed for additional sites? Then, what sort of research, inventory, or management should be done to further ensure the orchid's survival?

Compiling information from state heritage programs and other sources permits the regional heritage staff to determine global priorities or "ranks" for plant and animal species and natural communities. For high-priority elements, a "global ranking form" is used to document the basis for the rank. (Often a state heritage program familiar with the element provides the initial draft of these forms.) These element ranks and forms are subsequently reviewed and entered into a computer at the Conservancy's national office, then made available to Conservancy field offices and the state heritage programs. By considering both global and state ranks, the Conservancy is able to more effectively establish its priorities for protection at the state and national levels.

The regional heritage staff also cooperates with the Conservancy's stewardship department in producing reports that detail the habitat, biology, and management needs for species and communities that we want to protect. These "element stewardship abstracts" provide a standard format for summarizing available information on the proper management of a particular species or community. They also facilitate communication of management information among different Conservancy preserve stewards, offices, heritage programs, and others concerned with the protection of these species and communities. This communication is critical if we are to avoid not only the costs of duplicated efforts but also the loss of the species and communities we are striving to protect. Finally, the abstracts help identify "information gaps," so that we can determine future research needs. Because we will never know *everything* about caring for particular species and communities, stewardship abstracts are selectively revised as our knowledge increases.

Finally, staff members of the Eastern Regional Heritage Program assist state heritage programs in classifying and ranking plant and animal species and natural communities. They also help to collect, process, and evaluate information on these natural elements. Such activities are particularly useful in states with understaffed heritage programs. For two states, Vermont and New Hampshire, the regional heritage staff actually initiated state heritage programs in the regional office. These were then moved to the states and are being administered by smaller staffs. In other states without natural heritage programs, the regional heritage program director works closely with national and regional office staff and with state government agencies to establish heritage programs.

Because of its contributions to setting priorities and to assembling, processing, and disseminating

information, the Eastern Regional Heritage Program has been successfully integrated into the Conservancy's preserve selection and design process. Its role in complementing and supporting the work of the region's individual state heritage programs is well recognized, and it has been of obvious assistance to states lacking heritage programs. Based on this success story, The Nature Conservancy intends to establish comparable regional heritage programs in its three other administrative regions.

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Conservancy members around the country have already contributed almost $2,000,000 to this important new Fund. For further information, handled in full confidence, please contact:

Alice A. Pinsley, Director
The Nature Conservancy
Planned Giving Program
294 Washington Street
Boston, Massachusetts 02108
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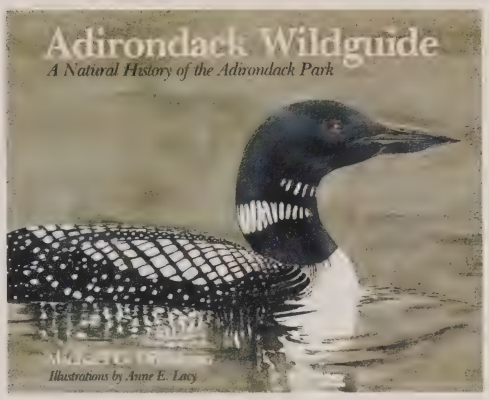
*Minimum contribution $5,000



THE ADIRONDACK WILDGUIDE

Covering an area of almost 10,000 square miles in northernmost New York State, the Adirondack Park is the largest natural area in the contiguous U.S.—nearly three times the size of Yellowstone National Park and larger than several states. Despite this unique status, non-technical information dealing with the natural history of the region has been virtually unavailable to the general public. To fill this void and to foster appreciation of the natural world, the Adirondack Committee of The Nature Conservancy and The Adirondack Council have jointly published *The Adirondack Wildguide.*

The 160-page book takes the reader through the forests, fields, streams, and peaks of the Adirondacks with an ecologist as guide. The interrelationships between plants and animals and their environment are explained and illustrated in an informative, entertaining manner. Over 115 photographs and original illustrations, many in color, complement the book's crisp, lucid text. Author Michael DiNunzio and artist Anne Lacy worked together in the Adirondacks for over two years to bring the *Wildguide* to life.

Included in the appendices are complete checklists of the Park's trees, birds, reptiles, fish, and mammals. *The Adirondack Wildguide* will prove to be a valuable resource for tourist, resident, student, and teacher alike.

The special price of the *Wildguide* for Conservancy members is $25.75 for hardbound and $16.20 for paperback, including handling and shipping. To order, send your check to: Adirondack Conservancy, P.O. Box 188, Elizabethtown, New York 12932.

NEW PROJECTS

GEORGIA

Heggie's Rock Preserve (Columbia County). Two purchased tracts totaling 101 acres embrace the most ecologically significant part (about 60 percent) of an extremely large granitic flat rock—one of the East's least disturbed of such major outcroppings. Of the 19 species, subspecies, or varieties of plants endemic to granite outcrops, 11 occur on Heggie's Rock. They include diminutive amphianthus (*Amphianthus pusillus*), open-ground Whitlow grass (*Draba aprica*), Puck's orpine (*Sedum pusillum*), a granite-loving sedge (*Cyperus granitophilus*), and a quillwort (*Isoetes melanopoda*). Most are endangered nationwide. Heggie's Rock will be managed by the Conservancy's Southeast Regional Field Office.

INDIANA

Fish Creek Fen (LaPorte County). Ranked by the Indiana Heritage Program as a threatened natural community, the 12-acre fen boasts three plants endangered in the state: arrow grass (*Triglochin palustris*), a valerian (*Valeriana ciliata*), and an orchid. It is a graminoid fen (one dominated by grasses and sedges) nourished by spring-fed, alkaline waters. Along with a number of prairie plants, the site harbors two insectivorous bog plants, round-leaved sundew and pitcher plant, both uncommon fen occurrences. Lying immediately adjacent to Fish Creek, this rare plant community will be managed by the Conservancy's Indiana Chapter.

KENTUCKY

Bad Branch Preserve—Addition—(Letcher County). Bordered by the coal fields of southeastern Kentucky, Bad Branch Gorge is an enclave of rare plants and animals. Twelve of its plant species are rare, threatened, or endangered in the state; four others, including American burnet and Fraser's sedge, thrive here at their sole Kentucky site. Bad Branch harbors the uncommon arrow darter, an endemic fish species, and its streamsides are habitat for threatened pigmy shrews and long-tailed shrews (endangered in the state). With a purchase of 261 acres, the Conservancy now has protected the lower end of Bad Branch—the biological heartland of the gorge. In addition, the director of the joint state/Conservancy Natural Areas Registry Program has secured protection agreements on a surrounding 1,732 acres, thereby safeguarding the entire watershed that nourishes Bad Branch. A project of the Katharine Ordway Endangered Species Conservation Program, the 2,541-acre preserve is managed by the Kentucky Chapter, whose fund-raising goal for the project is $190,000.

MAINE

Ship Island Group—Addition—(Hancock County). Widely hunted in the late 19th century for food and feathers, even during breeding season, Maine's eider ducks were reduced to a single nesting area by 1907. Since that time, their population has rebounded to some 20,000 pairs. But because of their marked vulnerability to disturbance, the ducks need protected land. In 1979 the Conservancy succeeded in acquiring 24 acres on three islands in Blue Hill Bay—Bar, Trumpet, and Ship—that provide critical nesting habitat for the third largest concentration of eider ducks in the northeastern U.S. The most recent addition to the Ship Island Group is the second one-half undivided interest in 11-acre Ship Island. Managed by the Maine Chapter, the refuge is a project of the chapter's "Islands of Life" campaign.

MINNESOTA

Blue Devil Valley (Yellow Medicine County). Cloaked in red cedars, bur oak, and prairie plant species, this rolling granite outcrop is habitat for the five-lined skink (*Eumeces fasciatus*), a lizard found only in four locations in the state and listed as endangered in Minnesota. The 27-acre site is managed by the Conservancy's Minnesota Chapter.

MISSISSIPPI

Panther Swamp National Wildlife Refuge—Addition—(Yazoo County). Panther Swamp is one of the most significant wintering areas for mallards, as well as a brooding and rearing site for wood ducks. All told, an estimated 75,000 ducks use the swamp in winter, and it offers potential habitat for bald eagles, peregrine falcons, and Bachman's warblers. Now encompassing 22,476 acres of semi-permanently flooded lands, low bottomland hardwoods, and high floodplain areas, this national wildlife refuge includes 12,022 acres acquired by the Conservancy in 1977. The newly purchased

319-acre parcel has been leased to the U.S. Fish and Wildlife Service until it is permanently transferred to the agency for inclusion in its refuge.

MISSOURI

Pershing State Park: the Bertha and Joel Massie Preserve (Linn County). Embracing hardwood forest and remnants of wet prairie, wet sloughs, and oxbow lakes, this 320-acre tract extends protection to a wet prairie community (also preserved in the adjacent Pershing State Park). Massasauga rattlesnake (*Sistrutus catenatus*) and ostrich fern (*Matteuccia struthiopteris*), both rare in the state, are believed to occur on the property. (The fern has been found within the park.) Named in honor of Bertha and Joel Massie, long-time supporters of the Conservancy, the preserve has been transferred to the Missouri Department of Natural Resources for management by its Parks Division.

Poverty Ridge Savanna — Addition — (Laclede County). Though dry oak-hickory savanna was once common in Missouri, little remains. A recent 40-acre addition to Poverty Ridge Savanna has enabled the Conservancy to safeguard the entire ecosystem—the state's finest protected example of this once widespread natural community. Here, the savanna's understory harbors a diversity of prairie plants, which flourish beneath an open canopy of trees. Leased to the Missouri Department of Natural Resources and managed jointly by that agency and the Conservancy's Missouri Chapter, the 160-acre savanna is a project of the Goodhill Foundation-funded National Critical Areas Conservation Program.

NEW JERSEY

Hirst Pond (Atlantic County). Vernal ponds, with their associated rare pond-shore flora, are an uncommon community type of the mid-Atlantic coastal plain. Filled with rainwater in spring, then dry by summer, the ponds' uncommon mix of plant species is determined by these fluctuating water levels. The Conservancy has acquired its first 20 acres at Hirst Pond, which shelters eight rare plants including two species being considered for federal protection: Hirst's panic grass (*Panicum hirstii*) and Boykin's lobelia (*Lobelia boykinii*). Endangered throughout its range, the pine barrens tree frog (*Hyla andersonii*) finds habitat here as well. Targeted for protection by the Conservancy's Katharine Ordway Endangered Species Conservation Program, the new preserve is managed by the Pennsylvania/New Jersey Field Office.

NEW YORK

Accabonac Harbor—Addition—(Suffolk County). The Conservancy has acquired a key one-acre inholding in the southwest section of its 135-acre tidal marsh preserve. Encompassed by a 1,000-acre estuary, the preserve hosts 158 bird species, including peregrine falcons (endangered nationwide) and nesting ospreys. Its waters provide overwintering ground for harbor seals and nearly 100 aquatic invertebrate species. Accabonac Harbor is managed by the Conservancy's South Fork/Shelter Island Chapter.

NORTH CAROLINA

Eagle Rock (Wake County). A conservation easement donated by Temple-Parker, Inc., has enabled the Conservancy to preserve a five-acre site embracing 80 percent of an isolated granite outcrop. Although similar outcrops in the Piedmont region have been destroyed, Eagle Rock remains untouched. It supports fragile yet undisturbed early successional plant communities, characterized by specialized species that can survive on hard rock—mosses, lichens, sandworts, and sedums (or stonecrops). Most thrive on the fringes of small water-holding depressions in the exposed granite. The easement has been transferred to the Triangle Land Conservancy, Inc., which will monitor the property.

OHIO

Abner Hollow—Addition—(Adams County). A mosaic of woodlands and prairie openings, Abner Hollow is included in the renowned Edge of Appalachia Preserve System, owned and managed in part by the Cincinnati Museum of Natural History, in part by the Conservancy's Ohio Field Office. Embracing prime prairie property, the new 189-acre tract supports two species rare in Ohio: nodding mandarin and the eastern woodrat.

OREGON

Wren Grassland (Benton County). After years of extensive searching, less than 20 acres of relatively undisturbed native prairie have been found in Oregon's Willamette Valley. Recently purchased Wren Grassland embraces two of the valley's endangered plant communities: Willamette Valley xeric grassland and Willamette Valley oak savanna. Both are dominated by red fescue, a native bunchgrass. The Oregon Field Office will manage the 10-acre preserve.

RHODE ISLAND

Dickens Farm—Addition—(Washington County). Lying ten miles off the Rhode Island coast, Block Island is renowned among birdwatchers. Its large-

John C. Egbert

Vermilion flycatcher

Rattlesnake Springs

Here in southeastern New Mexico, in the parched landscape of the Trans-Pecos/Chihuahuan Desert, pulses an artery of life: a riparian desert oasis nourished by 13 springs. Emerging on adjacent National Park Service land, the springs flow immediately into and through this newly acquired Conservancy preserve, forming an unpolluted stream as well as a series of small marshes where sedges and rushes reign. The stream meanders on to feed the Black River, which, in turn, stretches to the Pecos. Dominated by willows and large cottonwoods, the wetland contrasts boldly with the surrounding dense thickets of algerita (desert holly), small-leaved sumac, acacia, mesquite, and western soapberry.

Though no more than nine acres all told, Rattlesnake Springs is a significant oasis, particularly for birds. It is the only known breeding site in New Mexico for Eastern bluebirds and orchard orioles. Bluebirds are cavity nesters that favor the willows and cottonwoods. Bell's vireos, threatened in the state, breed in the soapberry and probably in the mesquite thickets on the wetland's edge. Other "breeders" here include painted and indigo buntings, hooded orioles, vermilion flycatchers, and long-billed marsh wrens. But most of the area's birds are visitors—migrants drawn to this life-sustaining wetland like metal to a magnet. Endangered in the state, the Mississippi kite is an occasional visitor, as is the nationally endangered peregrine falcon, which breeds in the nearby Guadalupe Mountains. The most numerous migrating species are shorebirds and songbirds, particularly warblers.

Protected through the New Mexico Critical Lands Campaign, Rattlesnake Springs is part of the Conservancy's National Critical Areas Conservation Program, established in early 1981 through a $10-million challenge grant from the Goodhill Foundation. With assistance from Carlsbad Caverns National Park personnel, the New Mexico Field Office will manage the new preserve.

ly undeveloped southwest corner is now being protected through the Conservancy's R. K. Mellon Foundation-funded National Wetlands Conservation Project. A 28-acre parcel increases to 88 acres the land safeguarded at Dickens Farm: an untrammelled grassland with freshwater kettle ponds perched on bluffs along the coast. The preserve—scheduled for expansion to over 200 acres—provides habitat for myriad rare birds, including peregrine falcons, bald eagles, northern harriers, upland sandpipers, and grasshopper sparrows. Purchased through Conservancy-led fund raising, this addition to Dickens Farm has been transferred to the Audubon Society of Rhode Island for management.

WISCONSIN

Baxter's Hollow: the R. D. and Linda Peters Nature Preserve — Additions — (Sauk County). Three parcels—two purchased and one acquired through a land exchange—add 197 acres to this Conservancy preserve, which protects the undeveloped watershed of Otter Creek in the Baraboo Hills. Well known in the Midwest for its water purity, the creek is a cold-water trout stream used extensively for aquatic invertebrate research. The entire sanctuary, now totaling 2,097 acres, is also notable for its mix of northern and southern forest types—habitat for myriad nesting songbirds. The Conservancy's Wisconsin Chapter manages Baxter's Hollow.

CORRECTIONS

We apologize to our readers for the species misidentified in the January/February 1984 issue on Costa Rica. *Sobralia amabilis* (also known as *Fregea amabilis*) was our cover flower, and *Dermochelys coriacea* (leatherback turtle) was the figure at right on page 6. Also, belated thanks to Mike Tewes for the use of his fine ocelot photo on page 22.

MONTANA OFFICE OFFERS HORSEPACK TRIP

Adjacent to the Conservancy's Pine Butte Swamp Preserve in Montana is a wilderness area encompassing over one million acres—the Bob Marshall Wilderness. Known for its pristine lakes and streams, unparalleled mountain vistas, and abundant wildlife, the Bob Marshall offers visitors a true glimpse into America's Rocky Mountain wilds. The Montana Field Office invites you to join us for a horsepack trip into this rugged ecosystem from August 22-28. The trip, which will originate at the Pine Butte Preserve, is limited to 15 people. The cost is $1,500 per person (60 percent of this amount is a tax-deductible donation to the project). For details and reservations, contact: Suki Molina, Montana Field Office, P.O. Box 258, Helena, MT 59624/(406) 443-0303.

Do you own residential, commercial, or industrial property—farmland, mineral rights, or a villa in Spain? The Nature Conservancy accepts gifts of appreciated real estate: properties without any significant ecological value that can be sold to produce funds for natural area protection. Over the last few years, these "trade lands" donated by individuals and corporations have channeled more than $15 million into the Conservancy's land conservation programs. A gift of trade land is one way you can help safeguard America's natural heritage—and, at the same time, realize tax benefits that can offer a greater return than a sale on the open market.

There are many ways to make a donation of this kind: outright gift, bequest, undivided interest, gift-leaseback, bargain sale. . . . Our professional staff can work with you and your advisors to determine the most beneficial gift structure available. If you would like more information about this innovative way to contribute to our programs, please write to Ray Culter at: The Nature Conservancy, 1800 North Kent Street, Arlington, Virginia 22209—or call (703) 841-5351.

Turn your white elephant into a snowy egret—through a gift of trade land.

Alexander B. Adams

It is with great sorrow that we announce the death of Alexander B. Adams, who was a dynamic and creative leader of The Nature Conservancy at a critical stage in its development. As board member from 1960-72, president from 1960-62, and chairman from 1966-69, Mr. Adams is credited with first bringing together in the Conservancy the business and conservation techniques so important to our operation today.

Gordon Harrison, who himself played a significant role in our history from his post at the Ford Foundation, writes us: "When the environmental movement gathered momentum in the sixties, Alex was determined that the Conservancy keep step. He took on the task of designing a professional organization that could effectively handle the large resources that would be called for. He also took on the more difficult and often painful task of getting the necessary changes accepted. That . . . made him, in a real sense, the founder of the new Conservancy. . . .

"My hope is that those who knew him, as well as those who did not, will feel moved to honor him with special contributions in his name."

IN L.A. FOR THE OLYMPICS? VISIT A CONSERVANCY PRESERVE

Field trips to Southern California preserves, including Santa Cruz Island, will be offered to out-of-state Conservancy members and their guests during the summer Olympic Games held in Los Angeles this July. For information, contact the Southern California Project Office, 849 S. Broadway, Suite 660, Los Angeles, CA 90014, or call (213) 622-6594. Reservations are required for most trips.

ADDENDUM

In grateful appreciation, we wish to thank 1983 donors of trade land properties whose names were inadvertently omitted from our Annual Report (page 35):

Ms. Lynee Alvut
Ms. Evelyn L. Brenton
Mr. and Mrs. G. O. Brueckner
Mr. and Mrs. George W. Cochrane III
Mr. James F. Crews
Mr. and Mrs. James P. Eder
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Mr. Frank Freese
Mr. and Mrs. James A. Hishmeh
Ms. Gail Overton
Mr. Gordon N. Robinson

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A corporation becomes a Corporate Associate of The Nature Conservancy upon contributing between $1,000 and $10,000 annually to the operations of the organization.

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Alico, Inc.
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Individuals or husbands and wives become Life Members of The Nature Conservancy upon contribution of $1,000 for membership dues or for the Land Preservation Fund, Guarantee & Income Fund, or a State Land Preservation Fund.

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Eastern Regional Office
294 Washington Street, Room 740
Boston, Massachusetts 02108
(617) 542-1908
Dennis Wolkoff, Vice President

Midwest Regional Office
328 East Hennepin Avenue
Minneapolis, Minnesota 55414
(612) 379-2134
John W. Humke, Vice President

Southeast Regional Office
P.O. Box 270
Chapel Hill, North Carolina 27514
(919) 967-5493
Thomas Massengale, Vice President

Western Regional Office
156 Second Street
San Francisco, California 94105
(415) 777-0541
John Nutter, Vice President

International Office
1785 Massachusetts Ave., N.W.
Washington, D.C. 20036
(202) 483-0231
Spencer Beebe, Vice President

Arizona Field Office
30 N. Tucson Blvd.
Tucson, Arizona 85716
(602) 327-4478

Arkansas Field Office
300 Spring Building
Little Rock, Arkansas 72201
(501) 372-2750
Kay Arnold, Director

California Field Office
156 Second Street
San Francisco, California 94105
(415) 777-0487
Peter Seligmann, Director

So. California Project Office
849 S. Broadway, Suite 660
Los Angeles, California 90014
(213) 622-6594

Colorado Field Office
1244 Pine Street
Boulder, Colorado 80302
(303) 444-2950
Sydney Macy, Director

Connecticut Chapter
55 High Street
Box MMM, Wesleyan Station
Middletown, Connecticut 06457
(203) 344-0716
W. Kent Olson, Director

Florida Field Office
1331 Palmetto Avenue, Suite 205
Winter Park, Florida 32789
(305) 628-5887
Michael L. Green, Director

Hawaii Project Office
1026 Nuuanu Avenue, Room 201
Honolulu, Hawaii 96817
(808) 537-4508
Kelvin Taketa, Director

Illinois Field Office
79 West Monroe Street
Suite 708
Chicago, Illinois 60603
(312) 346-8166
John Alexander, Director

Indiana Field Office
4200 N. Michigan Road
Indianapolis, Indiana 46208
(317) 923-7547
W. William Weeks, Director

Iowa Field Office
424 10th Street, Suite 311
Des Moines, Iowa 50309
(515) 244-5044
Lester L. Zimmer, Director

Kentucky Chapter
P.O. Box 2125
Covington, Kentucky 41012
(606) 291-8585
Michael Andrews, Director

Maine Chapter
20 Federal Street
Brunswick, Maine 04011
(207) 729-5181
John W. Jensen, Director

Maryland/Delaware Field Office
Chevy Chase Center Office Bldg.
35 Wisconsin Circle, Suite 304
Chevy Chase, Maryland 20815
(301) 656-8073
Steve Hamblin, Director

Michigan Field Office
Suite E, 531 N. Clippert Street
Lansing, Michigan 48912
(517) 332-1741
Tom Woiwode, Director

Minnesota Field Office
328 East Hennepin Avenue
Minneapolis, Minnesota 55414
(612) 379-2134
Geoffrey S. Barnard, Director

Missouri Field Office
2800 S. Brentwood Blvd.
St. Louis, Missouri 63144
(314) 968-1105
Rod Miller, Director

Montana/Wyoming Office
P.O. Box 258
West Power Block, 4th Floor
Helena, Montana 59624
(406) 443-0303
Robert J. Kiesling, Director

New England Field Office
294 Washington Street, Room 740
Boston, Massachusetts 02108
(617) 423-2545
Eve Endicott, Director

New Mexico Field Office
610 Gold Avenue, S.W.
P.O. Box 1846
Albuquerque, New Mexico 87103
(505) 242-2015
John Egbert, Director

New York Field Office
1736 Western Avenue
Albany, New York 12203
(518) 869-6959
Charles Bassett, Director

New York Chapters:

Adirondack Conservancy
P.O. Box 188
Elizabethtown, New York 12932
(518) 873-2610
Timothy Barnett, Director

Eastern New York Chapter
1736 Western Avenue
Albany, New York 12203
(518) 869-0453
Anne Williams, Director

Long Island Chapter
P.O. Box 72
Cold Spring Harbor, New York 11724
(516) 367-3225
Scott A. Sutcliffe, Director

Lower Hudson Chapter
RFD #2, Chestnut Ridge Road
Mt. Kisco, New York 10549
(914) 666-5365
David L. Weld, Director

South Fork/Shelter Island Chapter
P.O. Box JJJJ
East Hampton, New York 11937
(516) 267-3748
Russell S. Hoeflich, Director

North Carolina Field Office
P.O. Box 805
Chapel Hill, North Carolina 27514
(919) 967-7007
William de Buys, Director

Ohio Field Office
1504 West 1st Avenue
Columbus, Ohio 43212
(614) 486-6789
E. Charles Olson, Director

Oregon Field Office
1234 N.W. 25th
Portland, Oregon 97210
(503) 228-9561
Sam Johnson, Director

Pennsylvania/New Jersey Office
1218 Chestnut Street, Suite 1002
Philadelphia, Pennsylvania 19107
(215) 925-1065
R. T. Cook, Director

South Carolina Field Office
P.O. Box 5475
Columbia, South Carolina 29250
(803) 254-9049
LaBruce Alexander, Director

Tennessee Field Office
202 Capitol Blvd. Building
P.O. Box 3017
Nashville, Tennessee 37219
(615) 242-1787
Charles W. Cook, Jr., Director

Texas Field Office
503 B East 6th St.
Austin, Texas 78701
(512) 479-0301
Andrew Samson, Director

Vermont Field Office
7 Main Street
Montpelier, Vermont 05602
(802) 229-4425
Robert J. Klein, Director

Virginia Field Office
619-B E. High Street
Charlottesville, Virginia 22901
(804) 295-6106
Brian Shult, Director

Washington/Alaska Field Office
1601 Second Ave., Suite 910
Seattle, Washington 98101
(206) 624-9623
Elliot Marks, Director

West Virginia Field Office
1100 Quarrier Street, Room 215
Charleston, West Virginia 25301
(304) 345-4350
Ed Maguire, Director

Wisconsin Field Office
1045 E. Dayton Street, Room 209
Madison, Wisconsin 53703
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